

Lee Creek Bridge (No. 1)
Spanning Lee Creek at State Highway 59
Natural Dam
Crawford County
Arkansas

HAER No. AR-24

HAER
ARK.
17-NADA,
I-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

HAER
ARK.
17-NADA,
1-

LEE CREEK BRIDGE

(Natural Dam Bridge)

HAER NO. AR-24

LOCATION: Spanning Lee's Creek on State Highway 59 approximately 0.2 miles south of Natural Dam road, in the town of Natural Dam, Crawford County, Arkansas.

UTM: 15/3945350/373830

QUAD: Natural Dam

DATE OF CONSTRUCTION: 1934

STYLE: Two-span, Pennsylvania through steel truss bridge.

ENGINEER: The Lee Creek Bridge was designed by the Arkansas Highway and Transportation Department (AHTD) bridge engineering division under the general supervision of N.B. Garver, Chief Bridge Engineer.

BUILDER: The construction contract was awarded to M.E. Gillioz Company, Monett, Missouri.

PRESENT CONDITION AND USE: This bridge is in excellent condition and is currently in vehicular use.

SIGNIFICANCE: The Lee Creek Bridge is one of four historic Pennsylvania through steel truss bridges remaining in Arkansas. This bridge was built as part of a two bridge improvement project over Lee's Creek approximately one mile north of the small community of Natural Dam and was completed in 1934. It is an excellent example of its type and clearly demonstrates the advancements made by the AHTD in steel truss bridge design and technology by the 1930s.

HISTORIAN: Michael Swanda
Survey Coordinator
Arkansas Historic Preservation Program

DATE: August 26, 1988.

STRUCTURAL SYSTEMS

Pennsylvania steel trusses are used in the two identical main spans. These spans have built-up members made from channels, angles, continuous plates, batten plates, and single lacing bars riveted together. I-beams are used for all verticals and some diagonals. Six steel stringer approach spans, with concrete decking, connect to the south main span. The piers are reinforced concrete.

DIMENSIONS

The Lee Creek Bridge is 587 feet long. It contains two main spans, each 140 feet in length, with a vertical clearance height of 14 feet and clear roadway of 22 feet. Each steel stringer approach span is 50 feet long.

SIGNIFICANT EXTERIOR FEATURES

Commemorative plaques on either side of the bridge state "Lee Creek; M.E. Gillioz; Contractor; Arkansas; State Highway Commission; Jas. R. Rhyne, Director, N.B. Garver, Bridge Engineer; 1934; Bridge No. ____".

M.E. GILLIOZ

Crawford County Court and AHTD records show that the contractor for the Lee Creek Bridge was responsible for the removal of the existing bridge at this location. This earlier bridge, type unknown, was let by the county on July 15, 1907, to the Illinois Steel Bridge Company for \$4,600 "for the construction of a Steel Bridge."

LEE CREEK BRIDGE
(NATURAL DAM BRIDGE)
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Mr. M.E. Gillioz was born in Rolla, Missouri, in 1877. He learned the construction business as a young man working for the Santa Fe Railroad Company and by 1907 had started his own contracting company that moved to Monett, Missouri by 1914. His company was not only concerned with the construction of both concrete and steel truss bridges, but they also built churches, commercial buildings, roads, and dams. His business brought him huge success and he quickly expanded into the local Monett economy with business operations that included the Gillioz Clothing Store, the Gillioz Motor Company, the Gillioz Implement Company, the Gillioz Paint and Body Shop, and the Gillioz Bank and Trust Company. Some of Gillioz's construction projects in the state include the Lake Fort Smith Dam near Mountainburg, Arkansas, and the Current River Bridge at Van Buren, Arkansas.

SOURCES OF INFORMATION

Bridge Division Files, Arkansas Highway and Transportation Department, Little Rock.

Crawford County Court Records, Crawford County Courthouse, Van Buren, Arkansas.

Historic Bridge File, Arkansas Historic Preservation Program, Little Rock.

McClurkan, Burney B. Arkansas' Historic Bridge Inventory, Evaluation Procedures 1987 and Preservation Plan. Manuscript of file, Environmental Division, Arkansas Highway and Transportation Department, Little Rock.

M.E. Gillioz Research Files, Barrey-Lawrence Regional Library, Monett, Missouri.

ADDITIONAL INFORMATION

Shop drawings for the Natural Dam Bridge are filed at the AHTD; Drawing No. 3659, 3660, 3661, 3662, 3663, 3664, 3665, 3671, 3672, 3673, and Standard Drawing No. 2163, 2386, and 2435. AHTD Bridge No. 1811, AHPP Resource No. CW0158.

STATE OF ARKANSAS

STATE HIGHWAY COMMISSION
PLAN OF PROPOSED BRIDGES

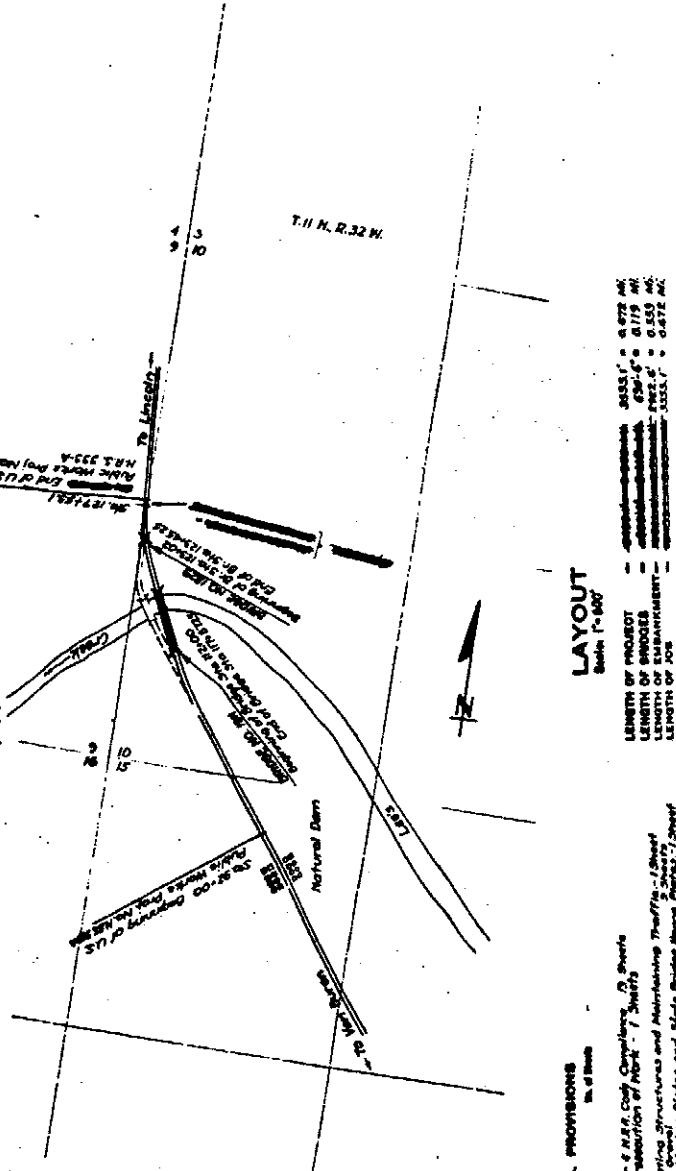
OVER
LEE'S CREEK
CRAWFORD COUNTY

ROUTE 45 SEC. 2

JOB NO 4170
U.S. PUB. WORKS PROJ. NO.
NRS 333-A

INDEX OF SHEETS

Sheet No	Drawn No	Title Sheet	Quantity	Unit
2	2603	Bridge Quantities	23	Sheets
3	2604	Bridge Earth Approaches & No. of Poles	2	Sheets
4	2605	Bridge Earth - No. of Poles	2	Sheets
5	2606	Technical Earthwork Sections - 10' Crown	2	Sheets
6	2607	Summertime and Wintering of Curves	2	Sheets
7	2608	Layout of Bridge No. 100	2	Sheets
8	2609	Layout of Bridge No. 100, Inc. the 100'	2	Sheets
9	2610	Standard and Reinforced Concrete Details of Bridge No. 100	2	Sheets
10	2611	Details of Bridge No. 100	2	Sheets
11	2612	Details of Bridge No. 100	2	Sheets
12	2613	Details of Bridge No. 100	2	Sheets
13	2614	Details of Bridge No. 100	2	Sheets
14	2615	Details of Bridge No. 100	2	Sheets
15	2616	Details of Abutment No. 2, Br. No. 100	2	Sheets
16	2617	Layout of Super Structure Br. No. 100	2	Sheets
17	2618	Details of Super Structure Br. No. 100	2	Sheets
18	2619	Details of Abutment No. 1, Br. No. 100	2	Sheets
19	2620	Details of Embankment Construction and Bank Erosion	2	Sheets
20	2621	Details of Standard F.A.P and Right-of-Way Alterations	2	Sheets
21	2622	Cross Sections	2	Sheets
22	2623	Settling	2	Sheets

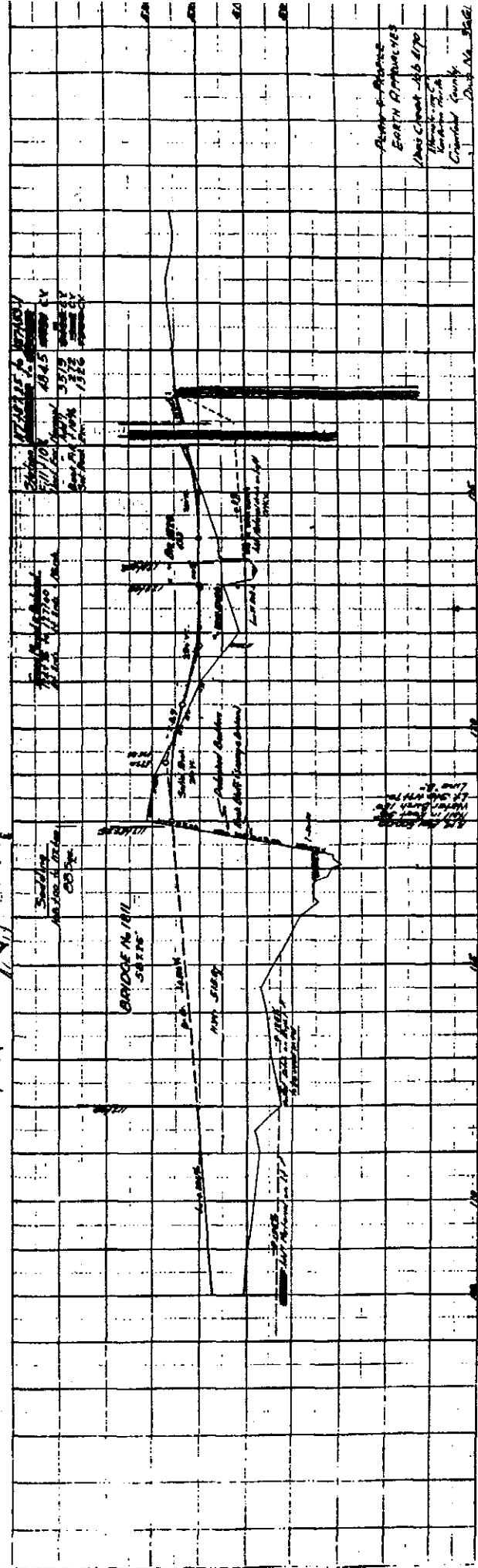
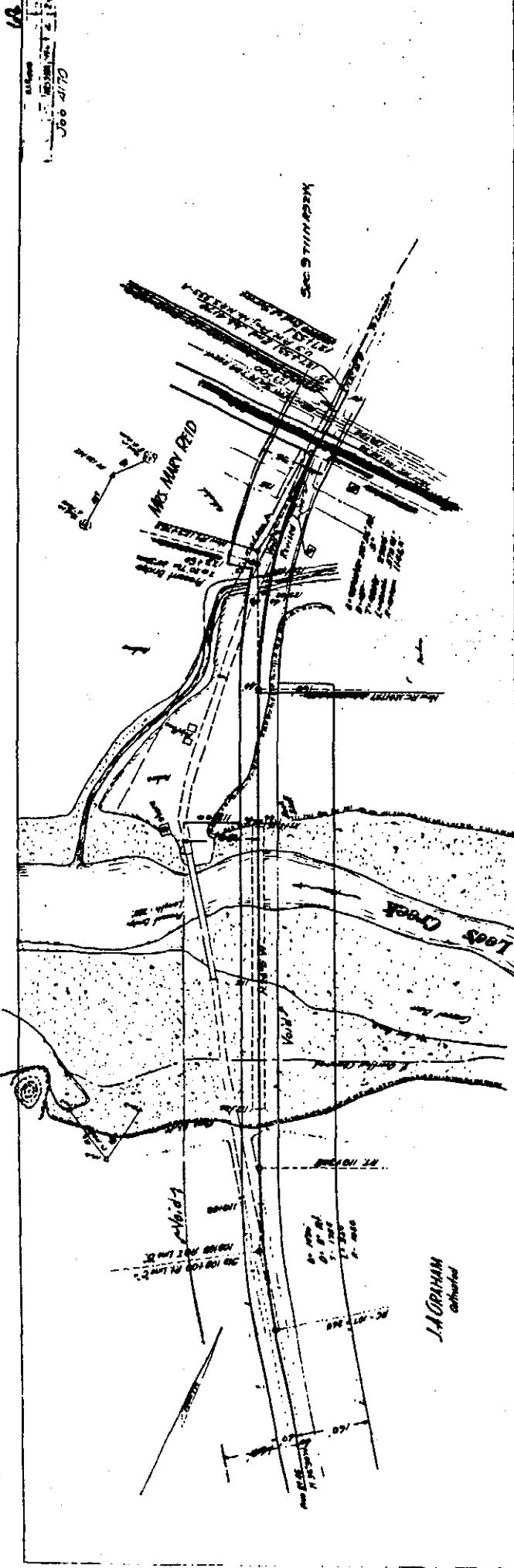
**SPECIAL PROVISIONS**

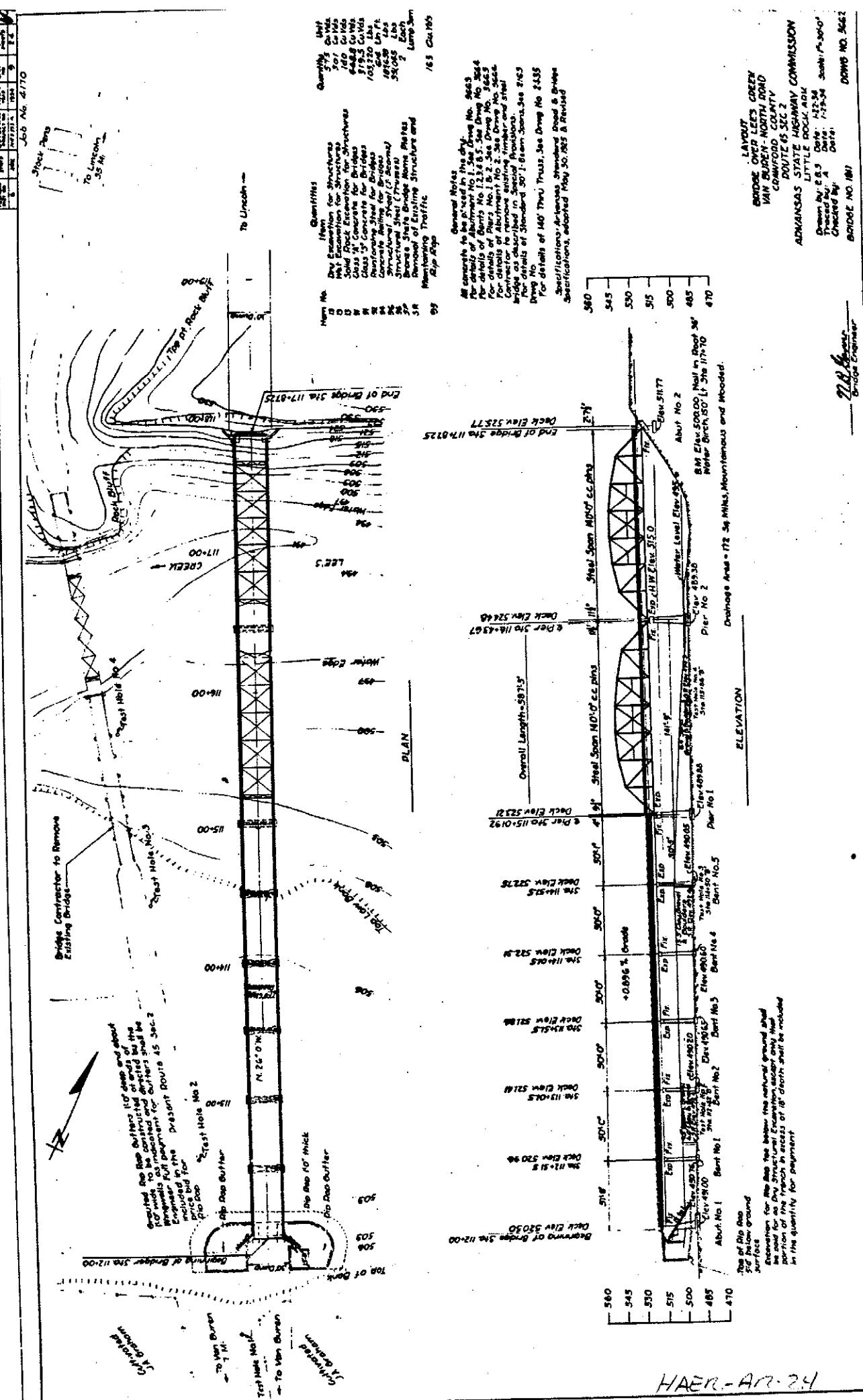
Reference	Description	Name
1	Engineering, Land Surveyor, Bridge, Roads, Drainage, Water, and Irrigation, and General	Department of Public Works, State of Arkansas
2	Engineering, Land Surveyor, Bridge, Roads, Drainage, Water, and Irrigation, and General	Department of Public Works, State of Arkansas
3	Engineering, Land Surveyor, Bridge, Roads, Drainage, Water, and Irrigation, and General	Department of Public Works, State of Arkansas
4	Engineering, Land Surveyor, Bridge, Roads, Drainage, Water, and Irrigation, and General	Department of Public Works, State of Arkansas

LAYOUT

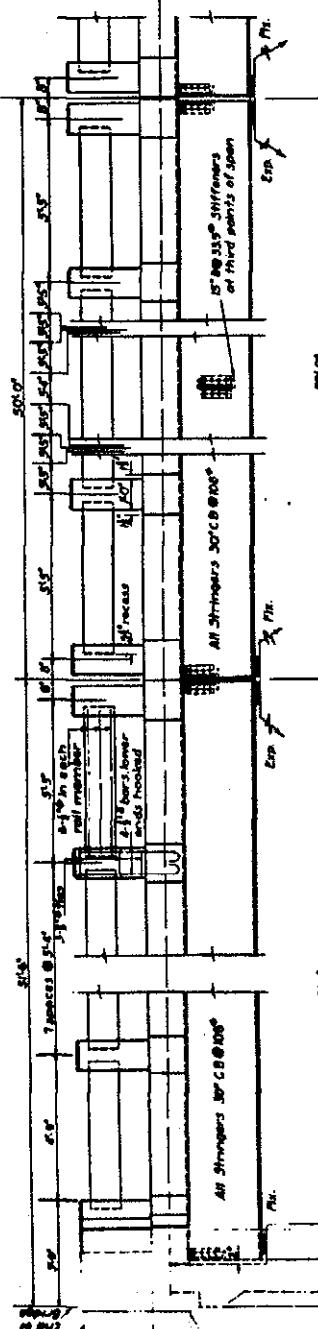
Length of Road	Length of Bridge	Length of Roads
100'	100'	100'
100'	100'	100'
100'	100'	100'
100'	100'	100'

Bridges No. 181 & 182
 Bridges

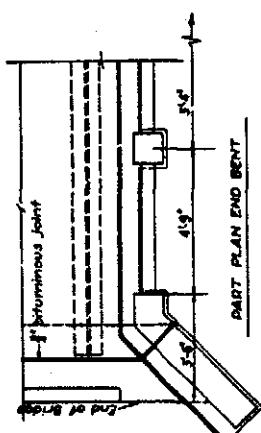




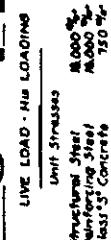
All rail parts 12-12" apart as shown
at each rail member with 10" gap.



RAIL PLAN END BENT

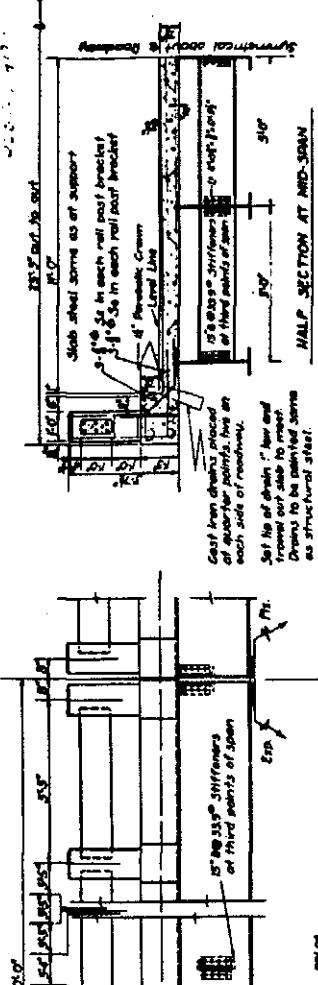


General Notes:
All components to be class 30°.
All expanded comment to have 3° chariot unless otherwise shown.
Shear links and bending diagrams of reinforcement shall meet the submitted and acknowledged before fabrication is begun.
Submitted drawing copies neither above and below must be submitted and acknowledged before fabrication is begun.
Joints due to be made to be made to fit unit price bid for reinforcing steel.
All plates to be made to fit unit price bid for field connections.
Shear points all structural steel shall be given one coat of paint and primer, 1st coat while hot finished with epoxy base.
2nd coat aluminum anodized.
This drawing shows general features of design only. Shop drawings shall be made in conformance with specification offices and be submitted and approved before fabrication of beams.
Specifications, dimensions, standards, details and drawings specified, adopted May 30, 1925 and revised.

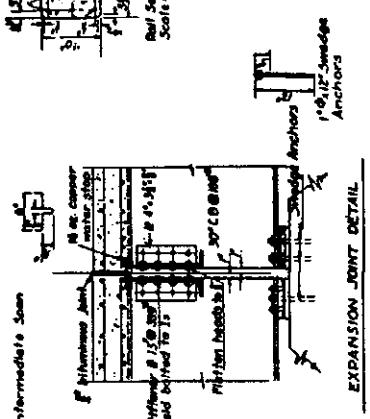
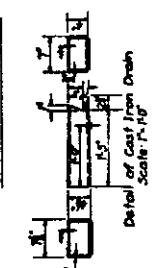


LIVE LOAD - HHS LOADINGS
Unit Stresses
Structural Steel 16,000 psi
Reinforcing Steel 16,000 psi
Concrete 750 psi

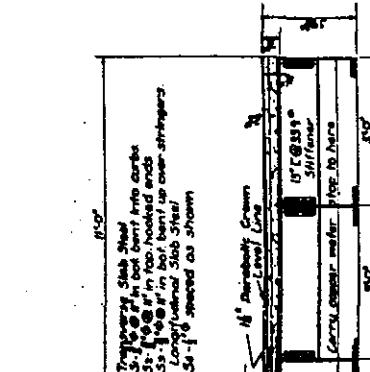
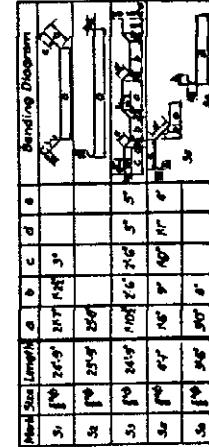
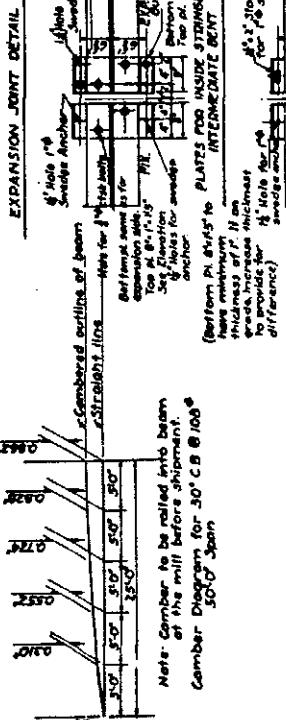
Extend rail members 3° from each end
at each rail member with 10" gap.



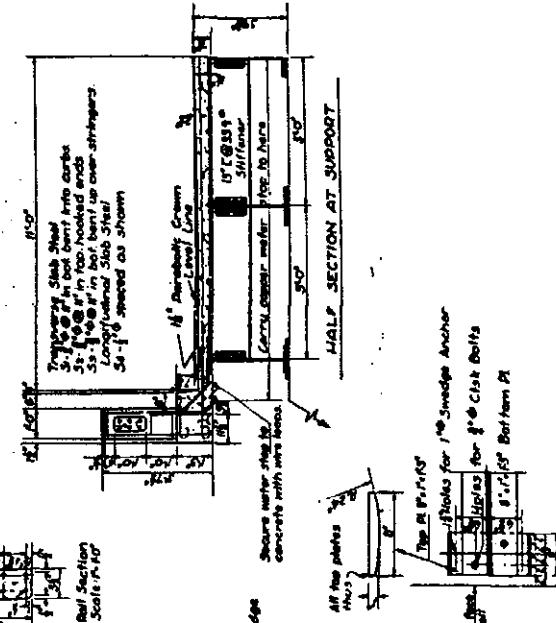
RAIL SIDE ELEVATION



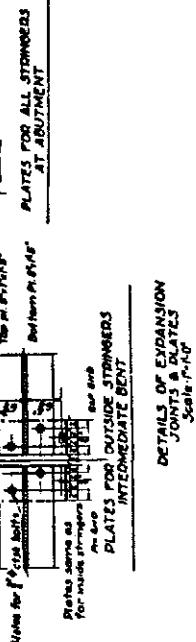
EXPANSION JOINT DETAIL



HALF SECTION AT MID-SPAN



HALF SECTION AT SUPPORT



DETAILS OF EXPANSION
PLATES FOR OUTSIDE STANCHIONS
INTERMEDIATE BENT

DETAILS OF STANDARD
CONCRETE DECK - 210' CLEAR DOWMY.
LITTLE ROCK RIVER
Arkansas State Highway Commission
Drawn by F.S. Day Date 1-15-34 Scale 1:100
Checked by J. L. Davis Date 1-15-34
Approved No. 9712 Date 1-15-34

DRAWING NO. 368

ARKANSAS STATE HIGHWAY COMMISSION
ROUTE SEC.
LITTLE ROCK ARK

DETAILS OF SPEEDS NO. 1 AND NO. 2
EAST COAST LINES CO. LTD.

HAEIL-Arc-24

